

# Julia Cisneros

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## RESEARCH INTEREST:

My research seeks to identify the key mechanisms driving bedform formation and evolution across different environments. This is driven by my curiosity in how surface processes shape bedforms and how this can be used to excavate clues about the formative conditions of inaccessible and ancient environments.

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## EDUCATION:

Ph.D., Geology, University of Illinois Urbana-Champaign, Champaign, IL  
Dissertation: *The morphology of alluvial sand dunes* May 2021  
Ph.D. advisor: Dr. Jim Best

B.S., Geology (minor GIS), Magna Cum Laude, Texas A&M University, College Station, TX  
Undergraduate Thesis: *Morphologic and computational fluid dynamic analysis of sand dune-topographic obstacle interactions on Earth and Titan.* May 2015  
Advisor: Dr. Ryan Ewing

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## APPOINTMENTS:

Postdoctoral Fellow, Texas A&M University, Texas Tech Uni., UT Austin June 2021-2023

Graduate Research Fellow, University of Illinois Urbana-Champaign August 2015-May 2021

Visiting Researcher, Utrecht and Delft, Netherlands, July-August 2018

Visiting Researcher, Cornell University, Ithaca, NY July 2014

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## PUBLICATIONS:

### **Published:**

Ali, H., Sheffield, S. L., Bauer, J. E., Caballero-Gill, R. P., Gasparini, N. M., Libarkin, J., Gonzales, K. K., Willenbring, J., Amir-Lin, E., **Cisneros, J.**, Desai, D., Erwin, M., Gallant, E., Jeannelle Gomez, K., Keisling, B. A., Mahon, R., Marín-Spiotta, R., Welcome, L., Schneider, B. (2021), An actionable antiracism plan for geoscience organizations. *Nature Communications*.

Guhlincozzi, A. R., **Cisneros, J.** (2021), A framework for addressing the lack of diversity in the Geosciences through evaluating the current structure of institutional efforts. *GeoJournal*.

**Cisneros, J.** et al., (2020), Dunes in the World's big rivers are characterized by low-angle leeside slopes and a complex shape, *Nat. Geosci.*, 13, 156–162.

Best, J., **Cisneros, J.**, Almeida, R., Galeazzi, C., Ianniruberto, M., Ma, H., Unsworth, C., van Dijk, T. (2020), Comment to: Why do large, deep rivers have low-angle dune beds?, *Geology*.

Galeazzi, C., Almeida, R., Mazoca, C., Best, J., Freitas, B., Ianniruberto, M., **Cisneros, J.**, Tamura, L. (2018). The significance of superimposed dunes in the Amazon River: Implications for how large rivers are identified in the rock record. *Sedimentology*, 65(7), 2388-2403.

**In review:**

Ma, H., Nittrouer, J.A., Fu, X., Parker, G., Zhang, Y., Wang, Yuanjian, Wang, Yanjun, Lamb, M.P., Best, J.L., Parsons, D.R., Wu, B., **Cisneros, J.**, (in review). Amplification of downstream flood stage due to damming of fine-grained rivers. *Nature Communications*.

Baar, A., **Cisneros, J.** (in review), Influence of grain size-dependent bedform morphology on flow and transverse slope in river bends, *J. Geophys. Res. Earth Surf.*

**In prep:**

**Cisneros, J.**, Best, J., van Dijk, T., Mosselman, E., Klienmans, M., (in prep) Dune morphology and hysteresis in alluvial channels during long-duration floods revealed using high temporal-resolution MBES bathymetry, In preparation for submission to *J. Geophys. Res. Earth Surf.*

**Cisneros, J.** (in prep) Flow depth and transport stage controls on the development of low angle dunes in shallow laboratory flows, In preparation for submission to *J. Geophys. Res. Earth Surf.*

**Peer-reviewed undergraduate research publications:**

Guhlin, A., Flores, J., and **Cisneros, J.** (2015), A Crumbling Campus, Explorations: The Texas A&M Undergraduate Journal

**Cisneros, J.**, McDonald, G. D., Hayes Jr., A. G. and Ewing, R. C. (2014), Sand Dunes: the Clue to Titan's Climate, Explorations: The Texas A&M Undergraduate Journal.

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**CURRENT PROJECTS:**

*'The Morphodynamics of Giant Dunes in Wind and Water'* funded by NSF EAR Postdoctoral Fellowship' in collaboration with Drs Ryan Ewing, Jeff Nittrouer, and David Mohrig

*'Geoscience Camps as a Tool for Generating Long-term Institutional Partnerships and Commitment to JEDI in Geosciences'* supported by the Departments of Women's and Gender Studies and Geography at University of Missouri in collaboration with Dr. Aida Guhlincozzi

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**INVITED TALKS:**

**Presented:**

*'Dune morphology and dynamics in alluvial channels'*, Soft Sediment Seminar, Jackson School of Geosciences, UT Austin March 2020

*'How do weirdly-shaped dunes both see into the past and predict the future, and why?'*, Earth Symposium Keynote Presentation, Department of Environmental Science and Ecology and Department of Geological Sciences, UT San Antonio September 2020

*'How do weirdly-shaped dunes inform us about the landscapes of the past, present, and future?'*, Department of Geology and Geophysics, Texas A&M University October 2020

*'Looking Forward: How do we encourage young BIPOC and Latinx students to be Geoscientists?'*, Geological Society of America Pardee Symposium, The Next Generation of Geoscience Leaders: Strategies for Excellence in Diversity and Inclusion October 2020

*'What controls the shape of dunes in alluvial channels?'*, American Geophysical Union Fall Meeting 2020, EP004. Autogenic dynamics of bedrock and sedimentary systems December 2020

*'The shape of dunes in rivers and possible controls on their formation'*, Department of Geology, Western Washington University February 2021

*'The shape of dunes in rivers and possible controls on their formation'*, Department of Geoscience, University of Wisconsin-Madison February 2021

*'The shape of dunes in rivers and possible controls on their formation'*, Department of Earth, Atmospheric, and Planetary Sciences, Purdue University February 2021

*'What controls the shape of dunes in alluvial channels?'*, Department of Geography, Durham University May 2021

**Upcoming:**

*'The shape of dunes in rivers and possible controls on their formation'*, University of Engineering and Technology, Peru August 2021

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**HONORS:**

**University of Illinois Urbana-Champaign:**

AGU 2020 Presidential Citation (Call for a Robust Anti-Racist Action Plan) December 2020  
Young Researcher Spotlight - AGU EPSP (nominated award) July 2019  
Award for Best Presentation at the Marine and River Dune Dynamics Conf. April 2019  
Academic Excellence through Office of Diversity, Equity & Inclusion March 2018  
Ranked as Outstanding (top 10%) TA by students May 2017  
Campus Insights student representative for Board of Trustees dinner April 2017  
Graduate College Distinguished Fellow August 2015 to August 2017  
Academic Excellence through Office of Diversity, Equity & Inclusion March 2017  
ASPIRE Graduate Student Panelist for students underrepresented in academia August 2016  
Co-Chair at Marine and River Dune Dynamics Workshop April 2016

**Texas A&M University:**

College of Geosciences Distinguished Student Award May 2015  
Geology and Geophysics Outstanding Senior Award for Academic Excellence May 2015  
Keynote Speaker at Geology and Geophysics Scholarship Dinner Banquet May 2015  
2nd Place Best Paper Award for Undergraduate Research Scholar Thesis May 2015  
1st Place Geology and Geophysics Department Research Symposium Oral April 2015  
1st Place Geology and Geophysics Department Research Symposium Poster April 2014

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**FELLOWSHIPS, GRANTS, AND SCHOLARSHIPS:**

NSF EAR Postdoctoral Fellowship (\$174,000) June 2021-2023  
NSF Graduate Research Fellowship (\$138,000) August 2017 to August 2020  
Harriet Wallace Geology Graduate Student Service Award (\$750) April 2020

Marine and River Dune Dynamics International Travel Student Award (€500)	April 2019
NSF Graduate Research Opportunities Worldwide (\$5,000 + €4,500)	June 2018
Outstanding Women Geology Graduate Student (\$2,000)	April 2018
UIUC Graduate College Distinguished Fellowship (\$75,000)	August 2015 to August 2017
GSA Graduate Research Grant (\$1,550)	March 2017
International Association of Sedimentologists Research Grant (€1,000)	July 2016
Marine and River Dune Dynamics International Travel Student Award (€500)	April 2016
ExxonMobil Field Camp Scholar Award (\$2,000)	May 2014
Will Rogers Memorial Scholarship	August 2014 to May 2015
Murry D Page Endowed Scholarship	August 2014 to May 2015
B P Loughnane Scholarship Fund	August 2013 to May 2015
Michael K Endowed Scholarship	August 2012 to May 2013
Geosciences Department Scholarship	August 2011 to May 2015
Texas Top 10% Award (\$8,000)	August 2011 to May 2015
Devon Energy Corporation Foundation Excellence Award	August 2011 to May 2015

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### CONFERENCE PRESENTATIONS:

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**Cisneros, J.,** Best, J. L, Garcia, M. H. (2019), The Formation of Dunes under Unidirectional Flows in Coarse Silts and Fine Sands, accepted, American Geophysical Union Fall Conference, San Francisco, CA, Dec.

**Cisneros, J.,** Guhlincozzi, A. R. (2019), Geoscience Camp! Methods for Introducing Geosciences to Middle School Girls, poster presentation, American Geophysical Union Fall Conference, San Francisco, CA, Dec.

Guhlincozzi, A. R., **Cisneros, J.** (2019), Geoscience Camp! Methods for Introducing Geosciences to Middle School Girls, oral presentation, Latinx Excellence in the Midwest Conference, Iowa City, IA, Oct.

**Cisneros, J.,** Best, J. L, van Dijk, T., Mosselman, E. (2019), Dune morphology and hysteresis in alluvial channels during long-duration floods revealed using high temporal-resolution MBES bathymetry, oral presentation, Marine and River Dune Dynamics Conference VI, Bremen, Germany, Apr.

**Cisneros, J.,** Best, J. L, van Dijk, T., Mosselman, E. (2018), Dune morphology and hysteresis in alluvial channels during long-duration floods revealed using high temporal-resolution MBES bathymetry, oral presentation, American Geophysical Union, Washington DC, Dec.

**Cisneros, J.,** Best, J. L. (2018), Quantifying the morphology of dunes in big rivers, oral PICO presentation, European Geophysical Union, Vienna, Austria, Apr.

**Cisneros, J.,** Best, J. L. (2017), Quantifying the morphology of dunes in big rivers using automated bedform analysis, oral presentation, 11<sup>th</sup> International Conference on Fluvial Sedimentology, Calgary, Alberta, Canada, Jul.

**Cisneros, J.,** Best, J. L. (2016), Low-angle dunes in big rivers: morphology, occurrence and speculations on their origin, oral presentation, American Geophysical Union Fall Meeting, San Francisco, CA, Dec.

**Cisneros, J.,** Best, J. L. (2016), Low-angle dunes in big rivers: morphology, occurrence and speculations on their origin, oral presentation, Marine and River Dune Dynamics Conference V, Bangor, Wales, United Kingdom, Apr.

**Cisneros, J.,** Best, J. L. (2016), Low-angle dunes in big rivers: morphology, occurrence and speculations on their origin, oral presentation, North Central GSA, Champaign, IL, Apr.

**Cisneros, J.,** McDonald, G. D., Hayes Jr., A. G., Smyth, T. and Ewing, R. C. (2015), Morphologic and Computational Fluid Dynamic Analysis of Sand Dune-Topographic Obstacle Interactions on Earth and Titan, oral presentation, Department of Geology and Geophysics Symposium, Texas A&M University, College Station, TX, Apr.

**Cisneros, J.,** McDonald, G. D., Hayes Jr., A. G., Smyth, T. and Ewing, R. C. (2015), Morphologic and Computational Fluid Dynamic Analysis of Sand Dune-Topographic Obstacle Interactions on Earth and Titan, Abstract 45756 oral presentation, Lunar and Planetary Science Conference, Houston, TX, Mar.

**Cisneros, J.,** McDonald, G. D., Hayes Jr., A. G. and Ewing, R. C. (2014), Morphologic and Computational Fluid Dynamic Analysis of Sand Dune-Topographic Obstacle Interactions on Earth and Titan, Abstract 18472 presented at 2014 Fall Meeting, AGU, San Francisco, CA, Dec.

**Cisneros, J.,** McDonald, G. D., Hayes Jr., A. G. and Ewing, R. C. (2014), Sand Dunes: the Clue to Titan's Climate, poster presentation, Department of Geology and Geophysics Symposium, Texas A&M University, College Station, TX, Apr.

**Cisneros, J.,** Rivers, C., Skrla, B., Ortiz, M., Moore, C., Price, A. E., and Johnson II, H. (2013), Gaining International Experience through a Bi-National Mapping Team Approach between Texas A&M University and the University of Costa Rica: The Student Perspective, Abstract 125-16 presented at 2013 Fall Meeting, GSA, Denver, CO, Oct.

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#### **TEACHING:**

**Teaching Assistant, University of Illinois Urbana Champaign** **January-May 2017**  
Taught the laboratory section of the upper-level undergraduate course Sedimentology and Stratigraphy.

**Teaching Assistant, Dept of Geology, Texas A&M University** **May-June 2015**  
Taught the 6-week field methods camp for upper-level undergraduates.

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#### **FIELD EXPERIENCES:**

**Field Researcher, Amazon River, Manaus and Tefé, Brazil** **June 2016 & November 2017**  
Conducted two-week river field surveys by deploying acoustic Doppler current velocimeter (ADCP) and multibeam echosounder (MBES) systems and conducting sedimentological investigation of riverbanks on the Amazon River during the wet and dry season.

**Field Researcher, Huang He (Yellow) River, Huayuankou, China** **July 2016**  
Conducted a two-week river field survey deploying parametric echosounder (PES) and MBES on the Huang He River during the wet season.

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**SERVICE, OUTREACH AND PUBLIC ENGAGEMENT:**

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**Panelist, AGU Earth and Planetary Surface Processes****April 2021**

Invited panelist at the AGU EPSP Connects event 'Building a supportive research community'

**Panelist, Geological Society of America Pardee Symposium,****October 2020**

Invited speaker and panelist at the GSA Pardee Symposia 'The Next Generation of Geoscience Leaders: Strategies for Excellence in Diversity and Inclusion'

**Writer and Signatory, Geoscience AntiRacism Petition @ Change.org,****June 2020**Contributed writing actions on the petition, 'Call for a Robust Anti-Racism Plan for The Geosciences' (<http://tiny.cc/4w2crz>), which was led by Dr. Hendratta Ali and has garnered more than 20,000 signatures as of July 2020. This petition has created discourse and opportunities for Geoscience societies, institutions, and research labs to engage in antiracism literature, ideas, and take antiracist action.**Curator and Contributor, GeosciencesLearners and GeoReadingForEquity****June 2020**Curated, organized, and offered literature regarding diversity, equity, and inclusion research in the Geosciences. This resource was offered online via my initiative GeoscienceLearners resulting in over 25,000 impressions and 300 link clicks of the organized database (<https://tinyurl.com/yafwro3h>). In addition, these resources were then compiled with other resources following my original organizational scheme, and launched on the website, <https://www.georeadingforequity.com>**Mentor, CU One-to-One Program, Champaign, IL****August 2015 – Present**

Mentor a young, middle-school aged girl once a week during the school year through the CU One-to-One mentoring program.

**Hydro-Geo Discussion Group Leader, UIUC****August 2017 – May 2020**

Lead a weekly discussion group between Geology, Geography, and Hydrosystems departments. This discussion group is meant to foster real collaboration and academic/personal relationships among those working on fluvial related topics on campus, by having a regular, student-driven discussion group. Duties include moderating discussion, confirming dates and speakers, and sending weekly reminders.

**Created, organized and led the Geoscience Camp for Girls****August 2019**

Developed the first ever Geoscience Camp for Girls, recruited 30 girls to attend camp, and c. 70 girls to take an IRB approved survey focused on young girl's interest and knowledge levels of Geoscience in order to increase diversity and inclusion in Geoscience at the School of Earth, Society and Environment at the University of Illinois at Urbana Champaign (see story below).

LAS News (2019) 'Getting more girls into geoscience - Students organize unique summer camp for middle schoolers', news article, University of Illinois College of Liberal Arts and Sciences, (<https://las.illinois.edu/news/2019-08-16/getting-more-girls-geoscience>), Aug.**Science exhibitor, Engineering Open House, UIUC****March 2017, 2018, and 2019**

Created the 'Journey through the Amazon' exhibit to share my research about the Amazon River with young kids and non-science adults.

**Peer mentor, Sloan UCEM, UIUC**

**August 2017 - May 2018**

Peer mentor to an incoming graduate student through the Sloan University Center of Exemplary Mentoring (UCEM) at Illinois. Met with mentee twice a semester to check in and offer advice or resources. Attended workshops, presentations, and mini-conferences related to diversity and inclusion, professional development, and effectively mentoring.

**Invited speaker, Campus Insights, UIUC**

**April 2017**

I was the *first ever* student invited to share my research via Pecha Kucha style presentation to the President, the Chancellor, and the Board of Trustees of the University of Illinois at the annual Campus Insights event. This event is meant share the learning, research, public engagement and social activities on campus. YouTube link: <https://www.youtube.com/watch?v=q3MUCgaogBs>

**Science communicator, UIUC**

**November 2017**

Wrote a blog (link below) and did a 'snapchat takeover' about my field work in the Amazon River to share with students and alumni at the University of Illinois Urbana Champaign.

LAS News (2017) 'Journey to the riverbank and back in time', news article, University of Illinois College of Liberal Arts and Sciences' (<https://las.illinois.edu/news/blog/2017-02-20/journey-riverbank-and-back-time>), Feb.

**Campus infrastructure consultant, Texas A&M University**

**July 2015**

Conducted a GPS survey and GIS analysis of areas of disrepair on campus as an undergraduate class project and published in a peer-reviewed undergraduate research journal. Subsequently, this garnered interest of the university's third-party contractor of campus infrastructure who asked to meet about our methods and offered funding to the Geography Society to continue our methods to produce a campus-wide map.